

Applicant: Kari Hasanen et al.
Application No.: 09/980,061
Art Unit: 1731

B¹
~~1-12.~~ (Amended) A method for closing a shoe against a backing roll to form a nip between a backing roll and a shoe of a shoe press/shoe calender in a paper machine, the nip extending in a cross machine direction, the method comprising the steps of:
measuring the position of the shoe of the shoe calender/shoe press with respect to a reference position at at least two positions which are spaced from each other in the cross machine direction; and
closing the shoe against the backing roll while controlling the position of the shoe based on the results of the measurement so the nip is of a desired shape.

~~13.~~² (Amended) The method of claim ~~12~~¹ wherein the position of the shoe with respect to the reference position is measured by at least two position measuring sensors.

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~~14-15.~~ (Amended) The method of claim ~~14-15~~¹ wherein a position sensor is also located in the middle of the machine, and the position of the shoe is measured by the position measuring sensor close to the driving side edge, the position measuring sensor close to the tending side edge, and the position sensor located in the middle of the machine.

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~~17.~~ (Amended) The method of claim ~~17~~¹ wherein the step of closing the shoe against the backing roll includes quickly closing the nip when in the initial stages of closing, and slowing down the movement when the nip starts to be almost closed.

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~~18~~ (Amended) An arrangement for closing a shoe against a backing roll to form a nip between the backing roll and the shoe of a shoe press/shoe calender in a paper machine, the nip extending in a cross machine direction, the arrangement comprising:
a shoe roll, having a shoe and hydraulic cylinders connected thereto for moving the shoe towards and away from the backing roll;
at least two measuring devices for measuring the position of the shoe, the measuring devices being positioned to determine the position of the shoe with respect to a reference position at two positions on the shoe which are spaced in the cross machine direction; and
means for controlling the position of the shoe during the closing of the shoe against the backing roll to form the nip based on the results obtained by the measuring devices so the nip is of a desired shape.

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~~23~~ ¹⁴ (Amended) An apparatus for closing a shoe against a backing roll to form a nip between the backing roll and the shoe in a paper machine, the apparatus comprising:

a backing roll;

a shoe;

a belt within which the shoe is positioned, the shoe being loaded against the backing roll to define a nip by a plurality of hydraulic cylinders;

a frame extending within the belt, the hydraulic cylinders supporting the shoe on the frame;

at least two position measuring sensors arranged in connection with the shoe between the shoe and the frame, the sensors measuring the position of the shoe and producing position measurements, the position measuring sensors being spaced from one another in a cross machine direction; and

a processing unit which receives the position measurements from the position measuring sensors, the processing unit generating signals which control the hydraulic cylinders to close the shoe towards the backing roll.

Please add the following new claims:

~~25~~ ⁷ 25. The method of claim ~~17~~ ⁶ wherein the backing roll is a thermoroll.

~~26~~ ⁸ 26. The method of claim ~~12~~ ⁴ wherein the reference position is a fixed position on a frame to which the shoe is mounted.

Remarks

Claims 12-26 remain pending in the application. In the Office Action dated October 24, 2002, the claims were rejected under 35 U.S.C. § 112, and under 35 U.S.C. 103 over the disclosures of *Bubik et al.* and *Koenigbauer et al.* and *Hoever et al.* as necessary, or over the